AMENDMENTS TO THE CLAIMS

1–8. (Cancelled).

9. (Currently Amended) A method for reconfiguring a telecommunications transport network after addition or removal of a network resource, the method comprising:

identifying a sequence of single circuit movements to ~~re-route a~~ modify the network from a set of n actual circuits CA_i (i=1, …, n), each satisfying a corresponding demand R_i to a set of feasible intermediate circuits CI_i which continue to satisfy the demands R_i and which best approximate a series of target circuits CT_i, comprising:

(a) initializing, at a network simulator, the circuit set CI to CA;

(b) for each demand R_i still to be processed

(i) calculating, at the network simulator, one or more candidate replacement circuits CI_i, each candidate replacement circuit CI_i satisfying the demand R_i and having a lower cost difference with respect to the corresponding target circuit CT_i than the current circuit CI_i satisfying the demand R_i;

(ii) replacing, at the network simulator, the current circuit CI_i with the candidate replacement circuit CI_i having the least cost difference; and

(iii) marking, at the network simulator, the demand R_i as having been processed; and

(c) identifying, at the network simulator, the sequence of single circuit movements with which circuits CI_i were replaced as the series of single circuit movements to ~~re-route~~ modify the network.

10. (Previously Presented) The method of claim 9 wherein each circuit comprises one or more legs connecting two or more nodes, and wherein calculating the cost difference of a candidate replacement circuit CI_i with respect to the corresponding target circuit CT_i comprises summing the costs of the legs of the circuit CI_i that do not overlap with the legs of the target circuit CT_i.

11. (Previously Presented) The method of claim 10 wherein calculating the cost difference further comprises excluding a cost associated with an unused leg of the target circuit CT_i.

12. (Previously Presented) The method of claim 9 wherein the cost of a circuit is the sum of the cost of each circuit leg.

13. (Currently Amended) The method of claim 9 further comprising, after processing all demands R_i, determining whether to take the sequence with which circuits CI_i have been replaced as the series of single circuit movements to ~~re-route~~ modify the network, or whether to repeat step (b) using the current set of feasible intermediate circuits CI_i.

14. (Previously Presented) The method of claim 13 wherein the determination is made based on the overall difference in cost between the CA circuits and the CI circuits.

15. (Previously Presented) The method of claim 13 wherein the determination is made based on the overall difference in cost between the CI circuits and the CT circuits.

16. (Previously Presented) The method of claim 9 further comprising providing the identified sequence of single circuit movements to a network manager for implementation on the network.

17. (Previously Presented) The method of claim 16 further comprising performing the identified sequence of single circuit movements on a network by the network manager.

18. (Currently Amended) A telecommunications transport network comprising:

a plurality of circuits that satisfy a corresponding plurality of demands R; and

a network simulator operative to reconfigure the telecommunications transport network after addition or removal of a network resource by identifying a sequence of single circuit movements to ~~re-route~~ modify the network by:

(a) initializing a circuit set CI to CA, wherein CA comprises a set of n actual circuits CA_i (i=1, …, n), each satisfying a corresponding demand R_i, and wherein CI comprises a set of feasible intermediate circuits CI_i which continue to satisfy the demands R_i and which best approximate a series of target circuits CT_i,;

(b) for each demand R_i still to be processed

(i) calculating one or more candidate replacement circuits CI_i, each candidate replacement circuit CI_i satisfying the demand R_i and having a lower cost difference with respect to the corresponding target circuit CT_i than the current circuit CI_i satisfying the demand R_i;

(ii) replacing the current circuit CI_i with the candidate replacement circuit CI_i having the least cost difference; and

(iii) marking the demand R_i as having been processed; and

(c) identifying the sequence of single circuit movements with which circuits CI_i were replaced as the series of single circuit movements to ~~re-route~~ modify the network.